



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,654	07/24/2003	Masanobu Okada	O3020.0342/P342	8902
24998	7590	12/02/2004	EXAMINER	
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP			KOYAMA, KUMIKO C	
2101 L Street, NW			ART UNIT	
Washington, DC 20037			PAPER NUMBER	
			2876	

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/625,654

Applicant(s)

OKADA, MASANOBU

Examiner

Kumiko C. Koyama

Art Unit

2876

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

Acknowledgement is made of receipt of Amendment filed on September 10, 2004.

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagata et al (US 6,629,643) in view of Okano (JPO11-153666) and Furuya (US 6,164,538).

Re claims 1, 3-5 and 7-9: Nagata teaches a magnetic card reader 1 including a card slot 5 (col 2, line 32), a magnetic head 15 formed in the card reader to perform reading from and writing onto the magnetic card 6 (col 3, lines 15-18) and a guiding path 8 with rollers 11-13 to transfer the card in the path (col 2, lines 37-49). The card is also ejected utilizing the pair of rollers 11-13 (col 3, lines 34-40). Nagata shows a magnetic head 20 located outside of the slot 5 (Fig. 1). Nagata further teaches that a magnetic head acts as a detector for detecting magnetic cards (col 2, lines 29-32), which is considered as a sensor for detecting whether a card is present outside the card entrance.

Nagata fails to teach an ultrasonic wave sensor comprising a transmitter to transmit ultrasonic waves outside the card entrance and a receiver to receive reflected waves of ultrasonic waves from a body when the body is present at the card entrance. Nagata also fails to teach a

Art Unit: 2876

memory for storing as a reference duration a necessary duration from transmission of ultrasonic waves to reception in the case where a card is present outside the card entrance, and an abnormality determination unit to make a comparison between the necessary duration at the time of reception of ultrasonic waves transmitted from the transmitter when the card conveyance mechanism discharges the card and the reference duration stored in the memory.

Okano discloses emitting ultrasonic wave repeatedly from an ultrasonic wave transmission element of each ultrasonic sensor toward a monitoring region and receiving reflection wave appearing in a specific monitoring period from the time of ultrasonic wave emission using an ultrasonic wave reception element at each time, the ultrasonic wave emission interval is made irregular for each ultrasonic wave sensor and the reflection wave received in the monitoring period is stored in memory means in turn. Based on a plurality of reflection wave data stored in the memory means, the existence of an object in the monitoring region is detected (Abstract).

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to integrate the teachings of Okano to the teachings of Nagata in order to determine whether a card is discharged in a proper manner for the user to receive his/her card from the card reader, and also ensures the safety of the reader from inappropriate objects from entering the reader.

Although Nagata discloses a magnetic card reader being attached to a magnetic card transaction apparatus, he fails to specifically disclose an output circuit for outputting information read by the readout head.

Furuya teaches a detector circuit being connected to an amplifier and the amplifier being connected to the comparator for further output of the data (Fig. 1).

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to integrate the teachings of Furuya to the teachings of Nagata as modified by Okano in order to adjust or customize the readout signal such that the transaction apparatus receive and process the data for further processing of the transaction.

Re claim 2 and 6: Nagata does not teach that the magnetic head 20 detects a foreign body is present outside the card entrance.

However, one of the embodiments of Nagata's invention shows a detector 70 that is an optical reflective sensor that detects a foreign object on the front surface (col 5, lines 45-50).

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to modify the teaching of Nagata in order to detect non magnetic card objects such that the card reader can prevent non magnetic card objects from entering the reader to ensure the safety of the reader and avoid any damages that may occur from foreign objects entering the reader.

### ***Response to Arguments***

3. Applicant's arguments filed September 10, 2004 have been fully considered but they are not persuasive.

Applicant submits "Nagata et al. does not provide a card reader having an ultrasonic wave sensor for detecting if a card (magnetic or non-magnetic) is present outside the card entrance." Applicant further submits that Okano does not teach or suggest a card reader having

Art Unit: 2876

“an ultrasonic wave sensor for detecting whether a card is present outside the card entrance when the card is discharged.” Examiner respectfully disagrees and believes that above limitations are taught by the combination of Nagata et al in view of Okano and Furuya. The rejection provided above under 35 USC 103 is based on a combination of these references, and not based on each reference individually.

As provided in the above rejections, Nagata teaches a magnetic head 20, which is located outside the slot and is capable of detecting a card. The entrance to the reader or slot is considered as the front panel 3. From such disclosure, Examiner concludes that Nagata teaches a card reader that has a sensor for detecting a card if the card is present outside the card entrance because at least some portion of the card must be outside (or left of front panel 3 in Fig. 1) in order for the head 20 to detect the card and when at least a portion of the card is outside of the reader, the head 20 is capable of reading or detecting the card. Examiner also realizes that the magnetic head is not an ultrasonic wave sensor. However, a magnetic head is a type of sensor that senses magnetic stripes on the card and the difference between the prior art and the claimed invention is a matter of utilizing a different kind of sensor. Since Nagata fails to teach the specific type of sensor (an ultrasonic wave sensor), Examiner provides prior art that supports Examiner's belief that an ultrasonic wave sensor is known to one in ordinary skill in the art at the time of the invention was made. Such prior art is Okano.

Prior to explaining the teachings of Okano, Examiner submits that it is not necessary that the references actually suggest, expressly or in so many words, changes or possible improvements in order to combine references together and that the references are shown to indicate that the given invention or recited claims are presented in the prior art. In re Scheckler,

Art Unit: 2876

58 CCPA 936, 438 F. 2d 999, 168 USPQ 716 (1971). Although it is not necessary that the references actually suggest the changes or improvement, the examiner understands that there must be some reason why one skilled in the art would be motivated to make the proposed combination of references. In re Nomiya, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make modification be expressly articulated and the combination of references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. In re McLaughlin, 170 USPQ 209 (CCPA 1971).

Okano is provided to support the teaching of the ultrasonic wave sensor and the specifics thereof, and is not provided to teach the specifics of the card reader. Not only does Okano teach the specific type of sensor, which is the ultrasonic wave sensor, Okano also teaches that an existence of an object in the monitoring region is detected. Since Nagata already teaches one type of sensor, it would have been obvious to an artisan of ordinary skill in the art to modify the existing sensor with a different type of sensor in order to enhance the security capabilities of the card reader or to provide an additional function for multi purpose card reader and increase the usability of the card reader. Therefore, Examiner believes that the combination of Nagata in view of Okano is proper and teaches the limitations of the recited claims.

Similarly to Okano, Furuya is also presented to support the output circuit teachings, and is not relied on the teachings of the specifics of the card not the ultrasonic wave sensor. However, the teachings of a card reader having an ultrasonic wave sensor is taught by Nagata in view of Okano with the additional teachings of Furuya. Therefore, Nagata in view of Okano and Furuya teaches all the limitations recited in the instant claims.

Referring back to Okano, Applicant submits that neither Nagata et al. nor Okano teaches or suggests an ultrasonic wave sensor arrangement as recited in claim 5. Specifically, Applicant submits that the references fail to suggest a necessary duration as a reference for determining if a card is properly discharged outside the card entrance and also lacks a memory for storing the wave travel duration information as a reference duration. However, Examiner respectfully disagrees. Okano specifically teaches a specific monitoring period from the time of ultrasonic wave emission using an ultrasonic wave reception element at each time. Furthermore, Okano teaches setting a cycle period on line 1 in paragraph [0047], securing a detecting period on line 4 in paragraph [0049] and reading a ultrasonic wave emission waiting time data on lines 3-4 in paragraph [0051]. Such disclosure teaches storage for storing such time related data within the system. Therefore, Okano teaches a necessary duration as a reference.

With respect to Applicant's arguments that Okano further lacks any teaching or suggestion of an "abnormality determination unit" capable of making a comparison between duration times during card discharge to determine abnormalities, Examiner respectfully disagrees. Okano teaches that based on a plurality of reflection wave data stored in the memory means, the existence of an object in the monitoring region is detected. If no existence of an object is considered as normal and Okano's system detects an existence of an object in the monitoring region, then the system detects an abnormality. If an existence of an object is considered as normal and Okano's system does not detect an existence of an object, then the system detects abnormality. Furthermore, Okano discloses that in order to determine an existence of an object, a comparison between the saved reflected ultrasonic wave data is necessary (claim 2 and paragraph [0060]). Therefore, Okano teaches an abnormality unit.



***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kumiko C. Koyama whose telephone number is 571-272-2394. The examiner can normally be reached on Monday-Friday 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on 571-272-2398. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2876

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Kumiko C. Koyama*

Kumiko C. Koyama  
November 29, 2004



DIANE I. LEE  
PRIMARY EXAMINER